UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,822	12/10/2003	Joseph Zelvin	10276-085001	6791

26161 7590 10/05/2005

FISH & RICHARDSON PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
SANDERS JR, JOHN R	
ART UNIT	**PAPER NUMBER**
3737	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

e

Office Action Summary	Application No.	Applicant(s)	
	10/732,822	ZELVIN ET AL.	
	Examiner	Art Unit	
	John R. Sanders	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05/23/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 17, 18 and 35 are objected to because of the following informalities: Claims 17 and 18 are mutually dependent; Examiner has interpreted claim 17 as dependent upon claim 14. Claim 35 is improperly dependent upon claim 38; Examiner has interpreted claim 35 as dependent upon claim 28. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 44-50, 52-59 and 60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. No method steps are positively recited in the claims and as such it is unclear how the claims are meant to further limit the apparatus limitations of claims 1, 14, 27 and 28, and the method steps of claims 51 and 60.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 14, 44-50 and 52-59 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,065,837 to Goldfain et al ("Goldfain").

Goldfain discloses an ophthalmoscope indicative of a general arrangement of optical elements designed to project a convergent light beam to the eye such that the light beam diverges upon passing through the eye and impinging upon the retina, thereby diffusely illuminating the retina for the purpose of imaging the fundus. Goldfain expressly discloses the light beam converging at the cornea of the eye (col. 5, lines 2-8) but also discloses that with a smaller angle of illumination, light rays can be directed through the pupil over a greater range of cornea-to-objective lens distances (col. 6, lines 23-36). One of ordinary skill in the art would appreciate that the apparatus of Goldfain would be capable of projecting light into the eye such that the light converges at the crystalline lens of the eye instead of at the cornea, based upon the distance at which the eye is disposed to the apparatus (see FIG. 2) and given that Goldfain discloses narrowing the illumination angle.

4. Claims 38, 42, 43 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,742,374 to Nanjo ("Nanjo").

Nanjo discloses generating convergent light via an illumination path (refs. **7, 13, 14, 15, 16**) and directing the light through an illumination portion of the eye segregated from an imaging portion of the eye (fig. 2). Lens **16** converges ring-shaped light formed by diaphragm **15** on to the periphery of the cornea of the eye **18** and the fundus is imaged through the center of the cornea using an imaging path (refs. **21, 22, 23, 24, 25, 26**). Diaphragm **22** is disposed conjugate to the pupil and is therefore operable for blocking unwanted reflections from the cornea.

5. Claims 60 and 62 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,139,151 to Ueno et al ("Ueno").

Ueno discloses using a retinal imaging system with an illumination path (71-77, fig, 6) for delivering light to a spot on the pupil and an imaging path for (78-84, fig. 6) for receiving reflected light to an imaging device wherein the light source 71 is operable to rotate relative to the eye (col. 9, lines 14-65). It is inherent that images taken by a fundus camera include shadows indicative of details of the eye.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 6-8, 11-13, 19-21, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldfain.

Re claims 6, 7, 19, 20, 27: Goldfain discloses the above limitations but does not expressly disclose the means for narrowing the illumination angle. However, the arrangement of optical components (lenses, series of apertures) is within the knowledge of one of ordinary skill in the art such that, given that Goldfain discloses narrowing the illumination angle (col. 6, lines 23-36), one of ordinary skill in the art would be able to, without undue experimentation, arrive at an arrangement of optical components, each used for their art-recognized purpose, for which the illumination angle is sufficiently reduced upon projection into the eye.

Re claims 8, 11, 12, 21, 24, 25: Goldfain does not expressly disclose a housing for the disclosed ophthalmoscope, nor a housing for the illumination source optics, nor rilling or diffusion surfaces on the interior of said housings. However, if not inherent to an ophthalmoscope, housings for such a device, including housings designed to reduce unwanted internal reflection would have been obvious to one of ordinary skill in the art as desirable for any optical device for the express purpose of decreasing interference from outside light or unwanted internal reflection.

Re claims 13 and 26: Goldfain discloses replacing the light source with a light pipe (col. 7, lines 42-53). Though not expressly disclosed, one of ordinary skill in the art would be apprised that multicolored LEDs are common light source expedients in the art and as such it would have been obvious to one of ordinary skill in the art to modify Goldfain to include multicolored LEDs.

8. Claims 4, 5, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldfain as applied to claims 1 and 14 above, and further in view of U.S. Patent No. 4,453,808 to Takahashi ("Takahashi").

Goldfain discloses features designed to reduce glare created from unwanted corneal reflections (col. 7, lines 7-41) but does not expressly disclose an aperture for blocking said reflections. Takahashi teaches a confocal aperture 12 disposed to block the light reflected from the cornea (col. 4, lines 18-23). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Goldfain to include an aperture for the express purpose of blocking unwanted corneal reflection during imaging as taught by Takahashi.

9. Claims 9, 10, 22, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldfain as applied to claims 1 and 14 above, and further in view of 5,471,237 to Shipp ("Shipp").

Goldfain discloses stereoscopic imaging of the retina but does not expressly disclose a stereo filter. Shipp clearly teaches the use of stereo optics for producing left and right optical zones. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Goldfain to include a stereo filter as taught by Shipp, in order to obtain stereo images of the retina.

10. **Claims 2, 3, 15, 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Goldfain as applied to claims 1 and 14 above, and further in view of U.S. Patent No. 3,984,157 to LeVantine ("LeVantine").**

Goldfain does not expressly disclose a light trap for absorbing excess illumination directed away from the eye via a beam splitter. LeVantine teaches an ophthalmoscope with a light trap (fig. 2). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Goldfain to include a light trap in order to absorb excess light not sued for illuminating the retina, as taught by LeVantine.

11. Claims 28-30 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldfain in view of Takahashi and Shipp.

Re claims 28: Goldfain discloses an illumination path and imaging path as previously discussed with respect to claims 1 and 14 above but does not expressly disclose and aperture to reduce corneal reflections or a stereo filter for stereoscopic imaging.

Takahashi teaches a confocal aperture 12 disposed to block the light reflected from the cornea (col. 4, lines 18-23). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Goldfain to include an aperture for the express purpose of blocking unwanted corneal reflection during imaging as taught by Takahashi.

Goldfain discloses stereoscopic imaging of the retina but does not expressly disclose a stereo filter. Shipp clearly teaches the use of stereo optics for producing left and right optical zones that one of ordinary skill in the art would have found obvious to implement in the device of Goldfain, in order to obtain stereo images of the retina.

Re claims 29 and 30: Goldfain does not expressly disclose a slit lamp base. However, Official Notice is taken that such bases are common expedients the art for supporting and disposing optical systems in front of the eye.

Re claim 33: Goldfain discloses the above limitations but does not expressly disclose a series of apertures in the illumination path. However, the arrangement of optical components (lenses, series of apertures) is within the knowledge of one of ordinary skill in the art such that, given the disclosure of Goldfain, one of ordinary skill in the art would be able to, without undue experimentation, arrive at an arrangement of optical components, each used for their art-recognized purpose, for which the illumination angle is sufficiently reduced upon projection into the eye.

Re claims 34 and 35: Goldfain does not expressly disclose rilling on the interior of said housings or different colored diodes. However, if not inherent to an ophthalmoscope, housings for such a device, including housings designed to reduce unwanted internal reflection would have been obvious to one of ordinary skill in the art as desirable for any optical device for the express purpose of decreasing interference from outside light or unwanted internal reflection. Also, though not expressly disclosed, one of ordinary skill in the art would be apprised that multicolored LEDs are common light source expedients in the art and as such it would have been obvious to one of ordinary skill in the art to modify Goldfain in view of Takahashi and Shipp to include multicolored LEDs.

12. Claims 31-32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldfain in view of Takahashi and Shipp as applied to claim 28 above, and further in view of LeVantine.

Goldfain in view of Takahashi and Shipp does not expressly teach a light trap. LeVantine teaches an ophthalmoscope with a light trap (fig. 2). At the time of the invention, it

would have been obvious to one of ordinary skill in the art to modify Goldfain in view of Takahashi and Shipp to include a light trap in order to absorb excess light not sued for illuminating the retina, as taught by LeVantine.

13. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanjo as applied to claim 38 above, and further in view of Shipp.

Nanjo discloses the above limitations but does not expressly disclose selective blocking the reflected light with a stereo filter. Shipp clearly teaches the use of stereo optics for producing left and right optical zone. One of ordinary skill in the art would have found it obvious to implement a stereo filter in the device of Nanjo, in order to obtain stereoscopic imaging, as taught by Shipp.

14. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno.

Ueno does not expressly disclose video imaging. However, Official Notice is taken that video imaging is a common expedient in the art and as such one of ordinary skill in the art would find it obvious to modify Ueno to take video images of the retina, since Ueno discloses retinal imaging and video imaging is a common expedient in the art.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John R. Sanders whose telephone number is (571) 272-4742. The examiner can normally be reached on M-F 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on (571) 272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

30 September 2005

ERIC F. WINAKUR
PRIMARY EXAMINER